

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the amendments above and the following remarks. By virtue of the foregoing amendments, Claims 1, 22, 23, 30, 32-35, 37, 39, and 40 have been amended. Accordingly, Claims 1, 2, 5, 9-11, 19, 22-24, 30-41 are pending for examination in the present application.

No new matter has been presented by way of the claim amendments and such amendments are deemed unobjectionable. Entry thereof is respectfully requested.

Information Disclosure Statement

The Examiner's consideration of the information contained in the Information Disclosure Statement filed on October 31, 2003 is noted with appreciation.

Drawings

The indication that the drawings filed on October 31, 2003 have been accepted is also noted with appreciation.

Claim Rejection Under 35 U.S.C. §102

The test for determining if a reference anticipates a claim, for purposes of a rejection under 35 U.S.C. § 102, is whether the reference discloses all the elements of the claimed combination, or the mechanical equivalents thereof functioning in substantially the same way to produce substantially the same results. As noted by the Court of Appeals for the Federal Circuit in *Lindemann Maschinenfabrik GmbH v. American Hoist and Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984), in evaluating the sufficiency of an anticipation rejection under 35 U.S.C. § 102, the Court stated:

Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.

Therefore, if the cited reference does not disclose each and every element of the claimed invention, then the cited reference fails to anticipate the claimed invention and, thus, the claimed invention is distinguishable over the cited reference.

Claims 1, 2, 30, 31, and 39 have been rejected under 35 U.S.C. §102(e) as allegedly being anticipated by the disclosure contained in U.S. Patent No. 6,557,624 to Stahl et al. This rejection is respectfully traversed because the claimed invention as set forth in Claims 1, 30, and 39, and the claims that depend therefrom are patentably distinguishable over the disclosure contained in the Stahl et al. document.

Stahl et al. discloses a method and system for cooling a room. The cooling system of Stahl et al. includes a heat exchanger 110 and fan units 120. As shown, for instance, in Figures 1 and 2 of Stahl et al., the heat exchanger 110 is a continuous tube through which coolant fluid flows in the vicinities of the fan units 120. In other words, coolant fluid enters into one end of the heat exchanger 110 and exits through an opposite end of the heat exchanger 110. While the coolant fluid flows through the heat exchanger 110, the coolant fluid absorbs heat from the air around the heat exchanger 110 to thereby cool the air. The air around the fan units 120 is supplied into the room R by operation of the fans 130 of the fan units 120.

The cooling system disclosed in Stahl et al. differs in many ways from the systems and methods set forth in the present invention. For instance, with respect to Claim 1 of the present invention, Stahl et al. does not disclose that a mass flow rate of the coolant fluid supplied into each of a plurality of heat exchangers is manipulated. Instead, Stahl et al. discloses that the supply of coolant flow rate may be controlled manually or automatically. Ostensibly, because the heat exchange path 110 is a circuitous path and the fans 130 are

movable to various locations along the path 100, Stahl et al. did not intend for individual control of cooling fluid flow rate through each of the heat exchanger units (which the Official Action considers as each interface of fans 130 and heat exchange path 110). Indeed, Stahl et al. is primarily concerned with the ability to reposition the fans 130 along the heat exchange path 110 such that the fans 130 may be repositioned with changing needs in the room.

This concern, however, teaches away from individually varying the supply of coolant to each of the heat exchanger units. In fact, the coolant fluid flows through the heat exchanger 110 in the vicinities of the fan units 120 without regard to any type of independent flow control. Therefore, Stahl et al. does not disclose any type of mechanism for controlling or varying coolant flow in the vicinities of the individual fan units 120. In other words, the cooling fluid flow in the vicinities of the fan units 120 is the same for each fan unit 120.

In any regard, therefore, Stahl et al. fails to disclose that the mass flow rate of the cooling fluid supplied to each of the plurality of heat exchanger is individually manipulated. Accordingly, Stahl et al. fails to meet the test for anticipation set forth above and therefore cannot anticipate Claims 1 or 39 of the present invention.

Claim 30 of the present invention has been amended to include that the system includes means for individually manipulating a mass flow rate of the cooling fluid supplied to a plurality of means for receiving air. The means for individually manipulating varies the mass flow rate of cooling fluid supplied to each of the plurality of means for receiving air in substantially independent manners. Thus, assuming in Stahl et al. that the interface of the fans 130 and the heat exchange paths 110 represent a functional heat exchange unit as asserted in the Official Action, Stahl et al. does not disclose that coolant flow into each of these interfaces is individually manipulated in substantially independent manners.

As described hereinabove, Stahl et al. includes a circuitous coolant flow path 110 that carries coolant in the vicinities of the fans 130 without regard to the mass flow rate of coolant

flow past any individual fan 130. Instead, Stahl et al. discloses control over the supply of coolant into the entire path 110. Thus, Stahl et al. fails to disclose each and every element claimed in Claim 30 of the present invention and thus cannot anticipate Claim 30.

Accordingly, as Stahl et al. fails to anticipate Claims 1, 30, and 39, the Examiner is respectfully requested to withdraw the rejections thereof and to allow these claims. In addition, Claims 2, and 31 are also considered as being allowable over the Stahl et al. disclosure at least by virtue of their dependencies upon respective allowable Claims 1 and 30.

Claim Rejection Under 35 U.S.C. §103

The test for determining if a claim is rendered obvious by one or more references for purposes of a rejection under 35 U.S.C. § 103 is set forth in MPEP § 706.02(j):

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Therefore, if the above-identified criteria are not met, then the cited reference(s) fails to render obvious the claimed invention and, thus, the claimed invention is distinguishable over the cited reference(s).

The Official Action sets forth a rejection of Claims 22-24, and 32-41 under 35 U.S.C. §103(a) as allegedly being unpatentable over the disclosure contained in Stahl et al. in view of U.S. Patent No. 5,946,926 to Hartman. This rejection is respectfully traversed because Stahl et al. considered singly or in combination with Hartman fails to disclose all of the elements of Claims 22-24 and 32-41.

Prima Facie Case of Obviousness Has Not Been Established

Stahl et al. discloses a cooling system having a heat exchanger 110 and a plurality of fans 130. As described in Stahl et al., the heat exchanger 110 forms a circuitous path through which coolant flows. In addition, the fans 130 are movable to various locations with respect to the heat exchanger 110, such that, the fans 130 may be repositioned in a room. In this regard, the fans 130 are detachably connected around the heat exchanger 110 to facilitate air flow around the heat exchanger 110 at the various locations in the room. Stahl et al. discloses that the mass flow rate of coolant flow through the heat exchanger 110 may be controlled, presumably on a broad scale, that is, for the entire heat exchanger 110.

The Official Action correctly notes that Stahl et al. fails to disclose that the mass flow rate of cooling fluid flow is controlled by a pump as set forth in Claim 22 of the present invention. The Official Action also correctly notes that Stahl et al. fails to disclose that the mass flow rate of cooling fluid flow is independently controlled through a valve positioned upstream of the heat exchangers, as set forth in Claim 23 of the present invention.

In an effort to make up for these deficiencies in Stahl et al., the Official Action relies upon the disclosure contained in Hartman. More particularly, the Official Action asserts that Hartman discloses the control of cooling fluid flow through control of a variable flow pump 640. The reliance upon the disclosure contained in Hartman is improper for at least the following reasons.

The variable flow pump 640 pumps return water back to a chilled water generating system at a variable flow rate. Hartman also discloses that “a plurality of individual pumps” can be “arranged for operation in concert, i.e., so that the multiple pumps change flow rates together.” (column 7, lines 50-53). Thus, Hartman does not disclose that individual pumps are operated to individually control of the mass flow rate of cooling fluid delivered to each heat exchanger unit as claimed in Claim 22 of the present invention. In addition, Hartman

fails to disclose a plurality of valves positioned along respective cooling fluid lines upstream of respective heat exchanger units, where the mass flow rate of cooling fluid through each of the plurality of valves is individually controlled.

Because Stahl et al. and Hartman considered singly or in combination does not disclose every element contained in Claims 22 and 23 of the present invention, the Official Action has failed to establish a *prima facie* case of obviousness. (“To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). ‘All words in a claim must be considered in judging the patentability of that claim against the prior art.’ *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).”).

At least by virtue of Hartman’s failure to disclose the elements missing in Stahl et al., the proposed modification of Stahl et al. with the Hartman disclosure would still fail to yield all of the elements of the present invention as set forth in Claims 22-24 and 32-41. Therefore, even assuming for the sake of argument that the proposed modification of Stahl et al. as set forth in the Official Action were proper, the proposed modification would still not render obvious Claims 22-24 and 32-41.

Proposed Modification is Improper

The proposed modification of Stahl et al. based upon the disclosure contained in Hartman is improper. As held in *In re Gordon*, “[i]f [the] proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.” 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). As will be seen from the discussion below, the proposed modification would render Stahl et al. unsatisfactory for its intended purpose.

Initially, it should be noted that Stahl et al. pertains to a system for cooling a room where a plurality of fans 130 are movable with respect to a fixed heat exchanger 110. The fans 130 are movable with respect to the heat exchanger 110 so as to redefine the flow of cooled air into the room. Thus, as shown for instance in Figure 2 of Stahl et al., the heat exchanger 110 is configured to cover a substantially large area of a ceiling or floor. In addition, the fans 130 are movable to various locations with respect to the heat exchanger 110. It is quite evident that the intended purpose of Stahl et al. is to provide a cooling system that is reconfigurable to accommodate for changing conditions in the room.

However, that intended purpose is defeated if the Stahl et al. system is modified to include the pump 640 or valve 654 described in Hartman. More particularly, the addition of the pump 640 or valve 654 of Hartman into the heat exchanger 110 would no longer enable the Stahl et al. system to be reconfigurable. Instead, the fans 130 would be fixedly located along the heat exchanger 110 to enable the control over the chilled water discussed in Hartman. Thus, the proposed modification of Stahl et al. based upon the disclosure contained in Hartman would destroy a critical feature in Stahl et al. Consequently, there is no suggestion or motivation to make the modification proposed in the Official Action under the standards set forth in *In re Gordon*.

Accordingly, for at least the foregoing reasons, it is respectfully submitted that independent Claims 22, 23, and 39 are allowable over the disclosures contained in Stahl et al. and Hartman, considered singly or in combination. In addition, Claims 24, 32-38, 40, and 41 depend from allowable independent claims and are also allowable over these documents. These depending claims are also allowable over the disclosures contained in Stahl et al. and Hartman for reasons in addition to their dependencies.

Conclusion

In light of the foregoing, withdrawal of the rejections of record and allowance of this application are earnestly solicited.

Should the Examiner believe that a telephone conference with the undersigned would assist in resolving any issues pertaining to the allowability of the above-identified application, please contact the undersigned at the telephone number listed below. Please grant any required extensions of time and charge any fees due in connection with this request to deposit account no. 08-2025.

Respectfully submitted,

Chandrakant D. Patel et al.

Dated: October 4, 2004

By



Timothy B. Kang
Registration No.: 46,423

MANNAVA & KANG, P.C.
8221 Old Courthouse Road
Suite 104
Vienna, VA 22182
(703) 652-3817
(703) 880-5270 (facsimile)